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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,672	03/26/2001	Bryan W. Shirk	TRW (VSSIM) 4686-1	9811

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EXAMINER

LUM, LEE S

ART UNIT	PAPER NUMBER
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3611

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/817,672

Applicant(s)

SHIRK ET AL.

Examiner

Ms. Lee S. Lum

Art Unit

3611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. An Amendment was filed 9/29/03.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claims 1, 17, 32 and 42, the amendment of "the fiber, continuous matrix, filler or cellular material consisting essentially of a polyhydroxyalkonate resin" (emphasis added) is unclear because the suggested compositions are unclear. That is, it is (chemically) illogical to have "a fiber consisting essentially of a polyhydroxyalkonate resin" because this suggests a composition such as cotton "consisting mainly of polyhydroxyalkonate resin", which is, frankly, nonsensical. Likewise with the suggested compositions including "filler" and "cellular material".

Regarding a suggested composition including a "continuous matrix", this particular element defines nothing more than a "formed entity", and so the use of this element appears redundant. That is, a "biodegradable material" inherently includes a "continuous matrix". The spec corroborates this definition, such as on p 9, last paragraph, it is provided, "The biodegradable fibers incorporated into the continuous matrix of polyhydroxyalkonate resin..." (emphasis added).

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-11 and 13 (1 as best understood) are rejected under 35 U.S.C. 102(e) as being anticipated by Buchanan et al 6341304.

As best understood, re **Claim 1**, Buchanan discloses a vehicle component (col 15, lines 18-21, and col 14, lines 41-43) comprising a biodegradable material,

this material including a continuous matrix (inherent) , or fiber (col 15, lines 35-36),

consisting essentially* of PHA (polyhydroxyalkanoate) resin (col 3, lines 54-61).

* where "essentially" is disclosed in col 16, lines 18-22, "for applications such as... fibers" where "component I(B)" is an aliphatic co/polyester, such as PHA, and "present in an amount of about 30-75%" (emphasis added), in which the latter portion of the emphasized range is clearly interpreted as "essentially"

Re **Claim 2**, the reference discloses the PHA resin including poly (3-) hydroxybutyrate, and polyhydroxyvlerate (col 13, lines 1-3).

Re **Claims 3-9**, the reference discloses the component as made from a composite comprising a matrix of polyhydroxyalkanoate reinforced with a biodegradable natural fiber ("cellulose", col 10, lines 58-59),

The fiber being continuous/discontinuous (inherent).

Re **Claims 10 and 11**, the reference discloses the polyhydroxyalkanoate is in the form of fibers which may be woven/bonded to form a fabric (col 15, lines 35-37, "fiber applications include cigarette filters, diaper topsheet...").

Re **Claim 13**, the reference discloses the recited elements as discussed above.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4A. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Buchanan in view of Noda et al 5653930.

Buchanan does not specify the PHA as PHBV, while Noda shows this feature in Col 4, line 39. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include another polymer of the PHA class, as shown in Noda, as another type of biodegradable resin to form nonwoven material.

4B. **Claims 14-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Buchanan in view of Willett et al 6054510.

Buchanan does not disclose the biodegradable material as comprising filler material, while Willett shows this element in col 2, lines 62-63. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include filler material, as shown in Willett, for certain characteristics desired in the finished product, including minimization of sound.

4C. **Claims 17, 19, 32 and 42 (17, 32, 42 as best understood)** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wamez et al 5904367 in view of Buchanan et al 6071998.

Wamez discloses canister 24 and airbag 22, but does not state that either element is biodegradable. As previously discussed, Buchanan discloses automotive components comprising PHA in (col 15, lines 18-21). It would have been obvious to one with ordinary skill in the art at the time the invention was made to include biodegradability in occupant protection components, as shown in Buchanan, to aid in composting in landfills, thus aiding in reducing volume in the same.

4D. **Claims 18, 20-30, 33-41 and 43-45** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wamez in view of Buchanan, and in further view of Noda and Hansen.

The combination of these references disclose the recited elements, for the rationale discussed in the previous paragraphs.

4E. **Claims 31 and 46** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wamez in view of Buchanan, Noda, and Hansen, and in further view of Sinclair et al 5444113.

The previous patents do not disclose a Mullen burst specification, while Sinclair suggest that certain ranges of the Mullen strength and elastic modulus produce certain characteristics, in col 8, lines 25-30. Although ranges of tensile strength is application-specific, it would have been obvious to one with ordinary skill in the art at the time the invention was made to include them, as shown in Sinclair, to suggest the scope of the invention.

5. The prior art made of record, and not relied upon, is pertinent to this disclosure: Martin et al 6610764, Asrar et al 6156852, Noda Re. 36548, Wnuk et al 5939467, Ito et al 5747633, Noda 5602227, Kondo et al 5593778, Hammond et al 5550173.

6. RESPONSE TO REMARKS

Examiner reiterates her rejections using Buchanan, and despite the 112 issue discussed above. Contrary to Applicant's arguments on p 10, Buchanan clearly discloses the recited elements of "a biodegradable material including a continuous matrix, or fiber, that consists essentially of PHA", as recited in Claims 1, 17, 32 and 42, in a composition ("blend") consisting of "AAPE" – aliphatic-aromatic copolyesters, which include PHA. The structure of PHA is (inherently) a "continuous matrix", and the reference additionally discloses the structure of "fiber" formed from PHA in various paragraphs including col 15, lines 35-36, and col 16, lines 28-22. Therefore, Buchanan undubitably obviates these limitations.

Rejections with Buchanan combined with Willett and Warnez, in addition to Hansen, etc., are also maintained because Applicant is apparently attempting a piecemeal analysis of each separate reference, rather than a combination of references as clearly intended. See In re Keller, 208 USPQ 871 (CCPA 1981). With Willett, it is clear that the reference does not involve PHA, but involves filler material, a common portion of biodegradable material, and a vast number of other materials. Warnez involves components of an occupant protection device, and it would have been obvious to form components of such a device from biodegradable material to promote decomposition when these components are discarded in landfills, similarly to a multitude of other types of items/components made contemporaneously.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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8. Communication with the Examiner and USPTO

Any inquiry concerning this communication should be directed to Ms. Lum at (703) 305-0232, M-F, 9-6. Our fax number is (703) 872-9306. Any inquiry of a general nature, or relating to the status of this application/proceeding should be directed to Customer Assistance at (703) 306-5771.

Ms. Lee S. Lum
Examiner
12/5/03



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